



Key issues in REDD+ verification

Study commissioned by CIFOR

Michael Dutschke



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Photo by Tomas Munita/CIFOR
Timber near a local road in Napo Province, Ecuador

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Acronyms and abbreviations

AWG-LCA	Ad-hoc Working Group on Long-term Cooperative Action
CDM	Clean Development Mechanism
GCF	Green Climate Fund Governor's Climate and Forests Task Force
IAR	International Assessment and Review
ICA	International Consultation and Analysis
IPCC	Intergovernmental Panel on Climate Change
MRV	Measurement, Reporting and Verification
NAMA	Nationally Appropriate Mitigation Actions
NICFI	Norway's International Climate and Forest Initiative
ODA	Overseas Development Assistance
OECD	Organization for Economic Cooperation and Development
PES	Payment for Ecosystem Services
REA	REDD+ Effectiveness Assessment
REDD+	Reducing Emissions from Deforestation and forest Degradation, and the role of conservation and the enhancement of forest carbon stocks
REDD+ SES	REDD+ Social & Environmental Standards
REL	Reference Emission Level
RIL	Reduced Impact Logging
RL	Reference Level
SBSTA	Subsidiary Body for Technical Advice
UNFCCC	United Nations Framework Convention on Climate Change

Interviewees

This study has benefited immensely from a number of background interviews with negotiators and experts carried out during the week of 4–8 March 2013. The intention of these conversations was to isolate issues and find a middle ground from which a fresh negotiation effort can start. Statements are only cited indirectly and shall not be attributed to any individual interviewee. The author takes full responsibility for any misunderstandings or misrepresentations occurred.

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Executive summary

Amid the discontent of developing countries about the lack of reliable finance for Reducing Emissions from Deforestation and forest Degradation (REDD+), the issue of verification of results-based activities reached an impasse in the 2012 Doha negotiation round of the UN Climate Convention, leading to the suspension of the formulation of a REDD+ Methodological Guidance.

By definition, results-based activities need stringent and transparent procedures for Measurement, Reporting and Verification (MRV). Even if verification procedures were agreed upon, there are still a number of risks for environmental integrity of internationally supported REDD+ activities.

The disillusion about REDD+ finance mainly stems from the weakness of demand on carbon markets. Presently, development assistance is the main funding source, which brings up the old debate around aid conditionality, because obviously 'results-based' implies a conditionality for funding.

The present paper assesses the issues of REDD+ financing and verification in the context of the

negotiation positions of the key countries in the present debate. In its preparation, a number of interviews with REDD+ negotiators have been undertaken, in order to better understand the different positions.

The study first narrows down the focus on international verification to UN-based funding mechanisms, while bilateral and multilateral funding for individual country activities will usually be granted under individually agreed conditions.

Summing up, the study proposes a first-best option for the consistent verification of all Nationally Appropriate Mitigation Options, of which REDD+ is only one, under a transparent, peer-reviewed International Assessment and Review process. The more realistic proposal seems to be a second-best option of verifying REDD+ activities only. A REDD+ Effectiveness Assessment is proposed for internationally results-based finance for REDD+ emission reductions at national level. Different modalities are discussed for the choice of reviewers.

1 Aims and scope

The present study was prepared under the impression of an impasse at the Doha Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC) in agreeing upon Methodological Guidance for Activities Relating to REDD+. The draft conclusions proposed by the Chair (UNFCCC 2012) are a document full of brackets. Brackets in negotiation texts indicate the presence of alternative and optional text that has not (yet) been agreed among the parties. The Subsidiary Body for Technical Advice (SBSTA), during the first week of the meeting, was unable to come to an agreement to be decided at the high-level section of the conference in its second week. Confrontations were led by Norway and Brazil.

The study undertakes to answer the following questions:

1. What are the key issues in the verification discussion in the UNFCCC?
2. Who are the key actors and what are their motivations on the issues?
3. What are the options for resolving the issues?

In the preparation of this study, a number of in-depth interviews with key negotiators and inventory experts were conducted, none of which is directly cited or quoted. A non-representative sample of 12 experts and negotiators was addressed, out of which eight responded. The interviews were unstructured and individual, and each single one took between 40 and 60 minutes. They contributed valuable insights into the current negotiation process.

We will first structure the issues as they appear in the draft conclusions by the Chair and put them into their negotiation context. After that, the key actors and their respective interests will be presented. The subsequent section will be dedicated to a technical discussion of the issues raised. The section on 'Solutions' will present a first-best option under technical viewpoints assessing its implementation chances. The final section proposes a temporary second-best solution as an input to the SBSTA negotiations in Bonn in June 2013.

2 Reliable finance vs. verification

The Annex to the document on ‘Methodological guidance...’ (UNFCCC 2012) defines ‘Elements for a possible draft decision on modalities for national forest monitoring systems and measuring, reporting and verifying’.

Judging from the text in brackets, the main unresolved issue is the ‘*provision of adequate and predictable support, including financial resources and technical and technological support to developing country parties*’, a phrase that appears with small variations in not less than seven bracketed paragraphs. While investing the systems for measurement, reporting and verification (MRV), developing country parties are dissatisfied with the lack of long-term financial commitment by developed countries. This refers back to decision 4/CP.18, the Work Program on Long-Term Finance (UNFCCC 2011), which defers this process to the next Conference of the Parties.

Developed country parties, on the other hand, have been funding REDD+ readiness activities in developing countries that do not immediately translate into emission reductions. Funding the establishment of monitoring and reporting systems is among these expenses, setting the stage for results-based activities. ‘Results-based’ describes funding related to actual verified emission reductions. For developing country reporting, the document (in para 19) mentions the International Consultation and Analysis (ICA) process, which was already decided in decision 1/CP.16, the outcome document of the Ad-hoc Working Group on Long-term Cooperative Action (AWG-LCA) (UNFCCC 2011). However, for some reason, this clause is still in brackets, while the developed countries’ proposal for a further leading clause pledging additional guidance for externally financed results-based actions to be developed, was accepted by all parties (para 20). The specific

paragraphs on this ‘independent, international verification process’ (para 21) and the quest for the SBSTA to develop modalities and procedures (para 22) both remain in brackets. The negotiation text foresees individuals from the UNFCCC Roster of Experts as independent reviewers. An initiative led by Chile and Costa Rica, on the other hand, goes even further, committing to national-level third-party verification under the Verified Carbon Standard (Castillo 2013).¹

An issue not explicit in the negotiation text is the one of Nationally Appropriate Mitigation Actions (NAMAs), first mentioned in decision 1/CP.13, the Bali Action Plan for Developing Country Parties (UNFCCC 2008). According to the decision, these shall be ‘supported and enabled by technology financing and capacity building in a measurable, reportable and verifiable manner’. Today, there is a NAMA prototype registry at the UNFCCC Secretariat, where developing countries seek support for their activities and report on their results. Some parties include REDD+ activities under their NAMAs.

With all the discrepancies around reliable financing and independent verification, there is agreement on the following issues:

1. National and subnational forest monitoring systems shall follow the most recent guidance and guidelines of the Intergovernmental Panel on Climate Change IPCC (para 2).
2. The data provided by robust national forest monitoring systems should be transparent, consistent over time and suitable for MRV of the effects of specific activities (paras 3 and 9).
3. These national (and subnational, if appropriate) forest monitoring systems shall

¹ The effort also covers subnational and national reference-level (RL) validation with the intention of establishing national emission trading systems.

build upon existing systems, assess different types of forests in the country, including natural forest, be flexible and allow for improvement, and reflect the phased approach. The phased approach was first mentioned in the LCA outcome (Decision 1/CP.16), with the first phase being the development of national strategies, second, the implementation of policies and measures, and finally the implementation of results-based activities. The level of country commitment increases from phase I to III.

4. Reporting should be consistent with the established reference levels (RLs).²
5. The unit for accounting is CO₂ equivalent.
6. Data and methodologies are encouraged to improve over time, while maintaining transparency and consistency. Emission data shall be updated on a biennial basis.
7. Parties and observers are invited to submit their views on the technical assessment of the proposed forest reference emission levels.
8. The final paragraphs (23–29) request advice from parties and observer organizations.

Summing up the issues, much technical work has been achieved so far. It is, however, put at risk by the main disagreements related to reliable finance for REDD+ countries and to verification. As will be shown, both issues are intrinsically linked.

2.1 Reliable finance

For developing countries, financial assistance³ for their NAMA from Annex I is a central criterion. It is laid down in Article 4 (1) of the UN Framework Convention on Climate Change, which stipulates: ‘The implementation of these commitments shall take into account the need for adequacy and predictability in the flow of funds’ (UNFCCC 1992). A UN-REDD workshop concluded: ‘Broadly, the aim of NAMAs and REDD+ is to provide financial compensations

for reduced net emissions. To be efficient, the financial compensation shall provide the appropriate incentive to the right people at the right time, making it worthwhile for them to change their current behavior and use of resources.’ (Tulyasuwan *et al.* 2011).

The Doha negotiations have not led to advancements in committing long-term funding for ‘results-based finance’ under REDD+. Currently, given the low ambition level in international emission reductions, carbon markets do not offer good perspectives for private REDD+ funding, and there is no indication that this will change before 2020. Also, the focus on emission reductions (or carbon uptakes) only is contested (Lee 2012). In contrast to its original intention of mobilizing public *and* private finance, REDD+ is evolving to become exclusively an instrument of overseas development assistance (ODA).

In theory, REDD+ funding should be ‘new and additional’ (UNFCCC 2010), but in practice, there is no clear distinction on whether ODA is only being relabelled or not (Creed and Nakhouda 2011). Short-term funding is on track, but there is criticism that there are too many bilateral and multilateral funding agencies with too many different procedures and criteria (Lee 2012). It is even hard to tell how much finance has been committed by whom, and how many of these amounts are actually being disbursed: ‘The complete picture of REDD+ funding remains obscure as data is scattered, inconsistent and incomplete. This applies both to country-level reporting and fund-level reporting.’ (Creed and Nakhouda 2011). The Voluntary REDD+ Database⁴ appears to offer the most reliable vision. According to it, for the period 2010–12, 4.1bn US\$ were pledged, out of which 3.5bn US\$ were contractually arranged. In these 3 years, a total of 2.4bn US\$ were disbursed. There is some doubt by developed country parties as to the absorptive capacities in many developing countries, and concern about corruption (Ollivier 2012). Although the Cancun Agreements call for it, predictable long-term finance for climate change mitigation in developing countries is yet out of sight. As land-use decisions are long-term and opportunity costs are high on many occasions

² The term ‘reference level’ is wider in that it includes emissions *and* uptakes in the absence of the planned activity, while countries such as Brazil that use a Reference Emissions Level do not take into consideration uptakes from new afforestation. The author will in this text subsume both types under ‘Reference Level’ or ‘RL’.

³ For the purpose of this paper, finance includes technical support, because the capacity-building and technical assistance elements will eventually be evaluated as financial commitment.

⁴ <http://reddplusdatabase.org/>, accessed on 23 May 2013.

(e.g. mining or cash crops), the existent funding structure is insufficient to induce lasting change. Another experience is that the phased approach is more of a structural nature, because the phases actually overlap (Angelsen *et al.* 2009). Also, early project finance is creating pressure for institutions to catch up. ‘Results-based finance’ is defined in paragraph 73 of decision 1/CP.16 of the Cancun Agreements as funds used in phase III of results-based actions (UNFCCC 2010).

The question remains of whether linking the issues of reliable finance with verification is a wise strategy. The less the effectiveness of results-based actions can be verified, the lower the willingness of the donors to grant long-term funding.

2.2 Verification

In conformity with Articles 4 and 12, of the Climate Convention, all country parties have to deliver National Communications (UNFCCC 1992). Additionally, Annex I (developed) countries produce Annual Inventory Reports. These include emissions and uptakes from land-use-related activities, land use, land-use change and forestry. For both, there will be an international review process in place.

In the future, the reporting duties of all parties will increase significantly (Ellis *et al.* 2010). As per the Cancun Agreements (Decision 1/CP.16), there are split procedures for Annex I and non-Annex I countries. Annex I countries undertake Nationally Appropriate Mitigation Commitments or Actions, which will be verified under International Assessment and Review (IAR). Non-Annex I countries shall submit a National Communication every 4 years, along with Biennial Update Reports. Reports of Non-Annex I countries’ NAMA will undergo a ICA process ‘in a manner that is non-intrusive, non-punitive and respectful of national sovereignty’ (UNFCCC 2010). In Cancun, some countries, mainly India, had insisted on avoiding the term ‘review’ for developing countries.

The above-cited UN-REDD workshop sets reporting duties in direct context to financing:

[For developing countries to change their current behaviour and use of resources...], a system

for MRV emissions and removals related to implemented actions shall be set. The cornerstone of such a system is the national GHG [greenhouse gases] inventory and its national system, which covers all anthropogenic emissions by sources and removals by sinks in order to assess the real impact of human activities. An incomplete inventory is likely to give misleading information on real impacts and on GHG fluxes that those impacts generated. (Tulyasuwan *et al.* 2011)

For the negotiators of industrialized countries, the ICA procedure was apparently insufficient to prove the effectiveness of results-based finance. Industrialized countries request an independent verification process for results-based actions. This term was coined in Cancun Decision 1/CP.16 (paragraph 73) in the context of the phased approach. After phase I of REDD+ readiness building, ‘result-based demonstration activities’ could be implemented (phase II), eventually ‘evolving into results-based actions (phase III) that should be fully measured, reported and verified’. All parties acknowledge the need for verification at that stage.

The Norwegian party, and specifically Norway’s International Climate and Forest Initiative (NICFI), are interested in sound verification of how their taxpayers’ money is invested. NICFI aims at a robust MRV system, which may include independent verification by the UNFCCC Roster of Experts. The NICFI budget is accounted as ODA, which by definition rules out any carbon crediting.

Why is the request for verification a barrier in the negotiation process?

The verification debate recalls the one around aid conditionality and it raises old sensitivities in recipient countries. Aid conditionality is traditionally understood as linking aid to the acquisition of goods and services from the donor country. The REDD+ case can rather be compared to the FLEGT (Forest Law Enforcement, Governance and Trade) process, where strict verification rules apply, in order to make it effective (European Commission 2007).

A look at the key actors will further clarify negotiating parties’ interests and agendas.

3 Key actors of the negotiation

The dispute can best be described as proxy conflict between the country representatives of Brazil and Norway representing their respective negotiation groups.

3.1 Norway

Norway is the single Annex I party that allocates most funds for REDD+, as unilaterally committed at the Bali Conference in 2007. These REDD+ funds are declared ODA. In the case of Norway, REDD+ funds are clearly *new and additional*, because they are accounted separately from any other ODA. In the current state of negotiations, donors of REDD+ funding use national-level verification to satisfy the taxpayers' demand for aid effectiveness. Norad, the Norwegian Agency for Development Cooperation, has commissioned real-time evaluation of NICFI to consortia of international consultants (e.g. Tipper *et al.* 2010). The emission reductions achieved will neither be sold, nor will they be used for compliance against a national emission reduction target. Also, the other big REDD+ donors declare these funds towards the Organization for Economic Cooperation and Development (OECD) as ODA, meaning that no aid reflow from the sale of emission reductions is intended.

3.2 Brazil

Brazil is an emerging economy with one of the world's most advanced forest monitoring systems. It provides open online access to real-time satellite data and has nothing to fear from international review. In 2008, the President declared the voluntary target to reduce net deforestation by 70% by 2017. This goal was reinforced by a deforestation target of 80% to be achieved by 2020 (Saundry 2012). Within Brazil, over the years, there has been a heated debate around the costs of the policies reducing deforestation, and recurrent discussions of the Forest Code finally

enacted in 2012, with much of its original impetus watered down and a generous amnesty for illegal deforestation before 2008. It is thus a legitimate concern, not only for Brazil, whether the diverse costs incurred in the protection of forests will ever be recovered. In the short run, REDD+ policies definitely tend to obstruct the expansion of an export-oriented agriculture and parts of the mining industry. Whether these costs are acceptable, given the long-term benefits to the country of preserving its natural resources, mainly depends on the timeframes and discount rate applied. This debate has created an internal divide in the country over the past 15 years. The current Brazilian government is thus interested in demonstrating that real and short-term transfers occur in compensation for REDD+ policy costs.

Brazil has historically been concerned about 'green-washing' industrialized country emissions by integrating emission reductions from REDD+ into an international emissions-trading system. From the outset of the REDD+ debate, Brazil opposed this mechanism as being a part of the Kyoto Protocol or any successor, but instead achieved its discussion as an agenda item under the Convention, outside of legally binding commitments. The Brazilian intention was to avoid creating a carbon market for compliance under Annex I targets. Much has been discussed since about market and market-linked approaches, as opposed to non-market approaches on REDD+, and other sources of finance (Dutschke and Wertz-Kanounnikoff 2008). Meanwhile, with a number of subnational REDD+ activities underway, Brazil's strict refusal of a REDD+ market has softened. There are, however, internal discussions around the attribution of emission reductions between the federal and the state level, in the context of the Governors' Climate and Forests Task Force and linking REDD+ certificates to the Californian emissions-trading system.

An explanation for Brazil's stance in terms of climate diplomacy is that Brazil frequently takes on leadership of the 'Group of 77 and China', the developing country group within the UNFCCC and that delaying decisions can act as the smallest common denominator between parties with diverging interests.

3.3 Other actors

Norway's position was in alignment with the general feeling of all REDD+ donor countries, specifically the ones within the EU. They share the opinion that long-term finance is an issue, which has not been addressed sufficiently, but they are not willing to sacrifice environmental integrity as a bargaining chip. Also, in the absence of a long-term climate regime, there is no easy fix for the lack of financial perspective for mitigation activities.

The Group of 77 and China incorporates the most diverse interests. One subgroup is the Coalition for Rainforest Nations with its 41 members, who do

not object to verification criteria for national-level REDD and are also promoting a market-based REDD+ mechanism. On the other hand, there is Bolivia, with its Mother Earth Law, stipulating that the 'merchandizing of environmental functions of Mother Earth' is unacceptable (ALP 2012). The Bolivian government is therefore extremely critical towards an instrument that might be used for certifying carbon credits in the future. The spectrum of opinions and interests among G77 countries was so wide that in the specific situation, vetoing a decision was preferable as a power game to finding a solution that was agreeable within the negotiation group.

Interestingly, the last SBSTA session, in which the REDD+ decision failed to be agreed upon, had few in attendance. Among the countries to take the floor opposing REDD+ verification was Saudi Arabia, which does not have any tropical forests. It is difficult to speculate about each single country's motivation, but it is common in these processes that parties cooperate in providing mutual support to another party's agenda ('log-rolling').

4 Technical issues around verification

UN-REDD defines REDD+ verification as ‘[t]he process of formal verification of reports, for example the established approach to verify national communications and national inventory reports to the UNFCCC’ (UN-REDD 2009).

Verification is a necessary, but not sufficient condition for environmental integrity and with it the effectiveness of REDD+ funding. We will walk through the technicalities of the whole national REDD+ process, concentrating on risks for environmental integrity.

When talking about MRV under REDD+, the following issues need to be clarified: (1) what is REDD+, and (2) which type of landscape is a forest that qualifies under REDD+? We will further (3) introduce intra-national accounting, (4) relate to measurement uncertainties and to (5) methodologies for setting reference levels. Finally, we review the risks potentially encountered by verification.

4.1 Defining REDD+ and forests

Over time, REDD+ has been defined as including the following activities:

1. Reducing emissions from deforestation.
2. Reducing emissions from forest degradation.
3. Conservation of forest carbon stocks.
4. Sustainable management of forests.
5. Enhancement of forest carbon stocks.

The latter three elements are referred under the *Plus*.

The distinctions between these activities are not clear-cut. Conservation of forest carbon stocks could qualify as reduced emissions from deforestation. Reducing emissions from forest

degradation can be seen as a consequence of sustainable forest management (Reduced Impact Logging, RIL). Enrichment planting as part of the enhancement of forest carbon stocks, on the other hand, is also a modality of sustainable forest management. Another form of enhancing forest carbon stocks is reforestation of currently non-forested areas. The overlap is not a problem, because all these activities can be complementary on a landscape level (Dutschke and Pistorius 2008).

All REDD+ activities take place on areas defined as forest. As part of an AFOLU (Agriculture, Forestry and Other Land Use) approach, as suggested by the Intergovernmental Panel on Climate Change (IPCC), reporting may classify REDD+ as a sub-category, besides other land management. However, once REDD+ is to be accounted separately, the forest definition becomes critical.

Forest definitions are a key component of an MRV system for REDD+ (Bernard and Minang 2011). Defining forests was discussed at length under the Climate Convention, when the Clean Development Mechanism (CDM) under the Kyoto Protocol was to adopt definitions on eligible areas for afforestation and reforestation. Because of the variability of forests across the different climatic zones, a whole suite of literature discussed how to define forests (Holmgren and Davis 2000; Rakonczay 2002; Schuck *et al.* 2002; Carle and Holmgren 2003). Finally, the Conference of the Parties chose to copy the threshold ranges used for distinguishing forest-based activities in the national inventories under the Marrakech Accords. For the purpose of the CDM and during the first Kyoto commitment period only, forests were defined along the following thresholds to be nationally adapted within the ranges:

1. A minimum area between 0.05 and 1 ha.
2. A minimum crown cover between 10 and 30%.
3. A minimum height between 5 and 10 m.
4. Young stands with the above potential.

All countries hosting CDM afforestation and reforestation project activities have to report their choice of forest thresholds. Additionally, afforestation was defined as planting a forest on an area that was non-forest over 50 years before the start of the project. Reforestation was limited to areas that were deforested previous to 31 December 1990, in order to avoid replacing existing forests by plantations to be labelled as mitigation activity. Logically, all forests deforested in 1990 and beyond will classify as REDD+ activities. From a verification point of view, these definitions made the process extremely cumbersome, as on many occasions, the necessary data cannot be determined to a sufficient level of certainty.

At national level, where REDD+ is reported as one bundle among other land-use-related mitigation activities, such as new afforestation, peatland management or climate-smart agriculture, it is safe to leave the definition of activities subsumed under REDD+ to the reporting team for the national inventories. According to the Durban decision 12/CP.17, if the forest definition used under REDD+ deviates from the one used in the respective national inventory, this needs to be duly explained (UNFCCC 2011).

A separate verification process for REDD+, however, will add technical complexities related to forest definitions without necessarily increasing certainty.

When verifying national-scale REDD+ in an isolated manner, the following risks apply:

1. Unused areas not defined as forests may have reverted to dense secondary forests. Deforesting these areas may not be accounted for.
2. Highly biodiverse, but low-density forest areas such as the Brazilian *Caatinga* may be excluded under a national definition that mainly caters for rainforests, and their deforestation may remain undetected.

Forest definitions may vary between countries, but they should not vary over time. Therefore,

national-level REDD+ verification should take into consideration the National Communication or its Biannual Update Report.

4.2 Intra-national accounting

The Nested Approach, first presented by CATIE and BVEK in a submission on a document from the Nairobi Conference of the Parties (FCCC/SBSTA/2006/L.25) (Pedroni *et al.* 2009), cuts across the phased approach in the sense that early activities are being supported *before* a country has reached REDD+ phase III. Individual subnational activities are implemented providing their own MRV. Within a certain timeframe or beyond a certain share of the country's forests implemented as subnational activities, the national level has to opt in. During the transition phase, both national and subnational level can sell credits. If reductions are not being achieved at national level, subnational-level certificates are still valid, if independently certified.

The Nested Approach poses some challenges in terms of the RL, MRV and internal benefit sharing. MRV at subnational level should occur at a tier (accuracy level as recommended by the IPCC (Eggleston *et al.* 2006)) equal or higher than national-level accounting. This specifically relates to pools considered and omitted (Bernard and Minang 2011). Benefit sharing relates to the attribution of effects, be they positive, e.g. improving land tenure regimes or legal compliance, or negative, such as displacement (leakage) of deforestation into regions not covered by REDD+ activities. A national 'nesting protocol' may be needed to clarify these issues (Cortez *et al.* 2010). Most REDD+ countries have ignored this issue so far. In the context of the envisaged linking of the regions of the Governor's Climate Forest Task Force (GCF) with the cap-and-trade system of the state of California, intra-national accounting between the federal and the state level has recently created discussions within Brazil.

Today, the Nested Approach is already mobilizing private sector investment, while pushing governments at different levels to catch up with ongoing activities. Dealing with benefit sharing and MRV requires high capacities and good governance. At the same time, it can be an entry point to national Payments for Ecosystem Services (PES).

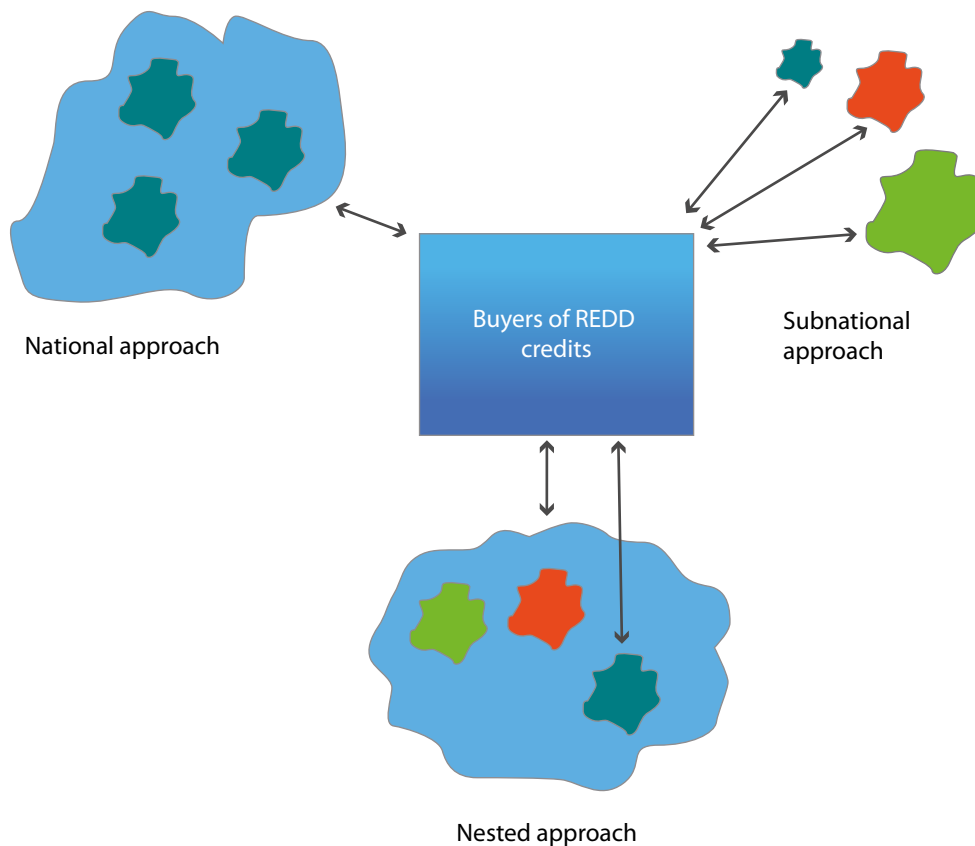


Figure 1. National, subnational and nested approaches (Angelsen *et al.* 2008)

4.3 Uncertainties in measurement

Measurement is the totality of the '[p]rocesses of data collection over time, providing basic datasets, including associated accuracy and precision, for the range of relevant variables. Possible data sources are field measurements, field observations, detection through remote sensing and interviews' (UN-REDD 2009). A 2009 study found that out of 99 developing countries, fewer than 20% submitted a complete GHG inventory and only three were considered good for monitoring forest area change and inventories. It concludes that the high level of uncertainty risks the effectiveness of REDD+ (Herold and Skutsch 2009). The same authors advocate starting at subnational level with different REDD+ modalities, experimenting with a mosaic of approaches. In this context, the Nested Approach offers a field of experimentation (Bernard and Minang 2011). Subnational REDD+ activities can provide methodology, data and capacities for the national level. For aboveground carbon measurement, at least the IPCC Tier 2 should be achieved on the country level, in order to provide credible data for results-based activities. As an incentive for countries to move upwards

from high uncertainty levels in a phased approach, the application of the principle of conservativeness is suggested (Mollicone *et al.* 2007) in such a way that only once certain benchmarks ('Interim Performance Indicators') have been reached, a higher level of financial compensation will be offered (Herold and Skutsch 2009). This concept has been applied by Norway in the context of its cooperation with Guyana (GFC 2009).

4.4 Reference level

Whether at project, subnational or country level, in order to claim environmental effectiveness of measures, there is a need to establish a baseline, before starting. RLs are always counter-factual; they can only be judged for consistency of their assumptions. Methodologically, there is no general agreement on how to set an RL (Angelsen and Verchot 2009). RLs can follow a historic trend, they can model expected future changes or they can model these changes including set variables, such as per-capita gross domestic product, commodity prices or forest coverage (Angelsen *et al.* 2009; Chagas *et al.* 2013).

Decision 1/CP.16 recognizes that RLs should be established transparently, taking into account historic data, adjusted for national circumstances. Subnational RLs can be established in the interim towards developing a national RL along the following alternative principles (Angelsen *et al.* 2011):

Trend-based RLs are transparent, as they project existing time series into the future. In the case of the Amazon Fund agreed between Norway and Brazil, the RL uses a rolling average over the past 10 years, so that recent improvements are factored in. As a drawback, the choice of the timeframe will always remain debatable. Also, trend-based projections are unusable for countries whose forests are under high threat today, but where little deforestation occurred in the past. On the positive side, using a rolling average, the RL becomes increasingly restrictive, because past success is factored in, making further achievements more demanding.

The reliability of **modelled RLs** depends on the parameters and assumptions used, which are negotiable. If they use geospatially explicit data, such as planned infrastructure developments, the model can be retroactively validated against past events. Thus, they have the chance to reflect business as usual better than historic averages. In practice, many developing countries will not disclose country-level time series of data, and the element of negotiation will prevail. This means the RLs lack transparency and have the potential to skew the results of mitigation activities.

Variable-adjusted modelled RLs may be simpler and less political in individual cases. The set variables can be agreed upon globally, thus limiting single countries' bargaining power. It remains, however, questionable, whether an international negotiation process can agree on variables that are scientifically sound and acceptable. On the positive side, there are a number of studies that help to identify suitable variables.

Annex I Parties already report reference levels for forest management, in order to assess mitigation progress. As most of the managed forests in

developing countries are planted, the RL is much easier to determine: species are more uniform and age-class distributions are known. Also, in Annex I countries, illegal harvesting hardly plays a role. This RL results in positive or negative factors that determine the annual variation of carbon in managed forests under business as usual. Even these factors, although determined under a clear methodology, have, in their application under the Kyoto Protocol, been subjected to bargaining in the negotiations. Therefore, at this time, there is little to learn from Annex I RL determination.

Due to their reduced scale, RLs for project activities are easier to determine, most of all, if a third-party validator supports the process. This is relevant under the Nested Approach. It is suggested that country RLs are broken down into agreed subnational RLs and that individual project activities have a double set of RLs, an absolute RL and an RL proportional to the respective reference region, both independently validated (Cortez *et al.* 2010). The overall challenge is to make sure that the sum of all subnational emission reductions does not exceed the total claimed at national scale.

National RLs have the benefit of minimizing displacement. However, validating them independently is not an easy task. Not only would this infringe on sovereign decisions, it is also methodologically questionable. While single activities act within a given regulatory framework, governments have the power to change the framework themselves, thereby increasing or decreasing the likelihood of REDD+ policies being successful. On the other hand, negotiating RLs offers the potential to establish a benchmark approach in the sense that over time an increasing share of the success will be considered the non-Annex I country's own contribution, without being compensated. National, or juridical RLs, like the ones for Brazil or Guyana, reflect the emission-level developments *including* policies and measures taken by the country (Chagas *et al.* 2013). In order to prove environmental integrity, these RLs are conservative and reflect political intentions. Durban decision 12/CP.17 agrees to establish a 'technical assessment' of RLs voluntarily submitted to the UNFCCC Secretariat (UNFCCC 2011).

Summing up, national reference levels under REDD+ remain imperfect. Scientific advice and independent validation at subnational scale can inform politics, thereby tightening negotiation space, but reliability will only increase slowly, as governance and monitoring techniques improve in developing countries.

4.5 Double counting

If emission reductions generate market-linked (voluntary) certificates, they need to be put into a centralized account in order to ensure that benefits from the same piece of land are not accounted for more than once. In the voluntary market, there are a number of registries, which results in the market lacking transparency making it potentially prone to double counting.⁵ The UNFCCC could establish

a centralized REDD+ Registry, where all REDD+ mitigation claims are documented and to which all REDD+ governments and registries in the voluntary market would have to report.

4.6 REDD+ country-manipulated national reporting

Overstating the effects of mitigation activities is a systematic risk only when monitoring data are intentionally manipulated or omitted, or not conservatively treated, which can easily be detected when independently reviewed. This is part of the IAR process for Annex I countries, yet it remains doubtful whether the ICA process for biennial reports by developing countries will achieve the same level of independence.

Table 1. REDD+ accounting risks

Risk	Description	Response
Inconsistency between national inventories and REDD+ reporting	Displacement effects may go unaccounted for because they occur in areas not defined as forests under REDD+	National-level REDD+ verification takes into consideration the National Communication or Biannual Update Report
Double counting at national level under a nested approach	Mitigation effects are claimed (and sold to the voluntary market) by subnational actors and by the national government	Clear national benefit sharing in place
Insufficient measurement capacities	Measurement capacities may not suffice for results-based activities	Offer incentives for moving to a higher IPCC tier level
The RL is overstated	RL is hypothetical and can never be verified. Yet, the risk is deliberate overstatement of business-as-usual emissions	Offer incentives to perform a voluntary UNFCCC technical assessment
Effects of activities overstated	Only possible by falsifying, skewing or selectively omitting monitoring data	Stringent ICA reviews
Double counting at global level	Emission reductions are accounted for twice (double counting) when sold to more than one buyer through several registries	Build up a centralized REDD+ Registry
Manipulated reporting	Some REDD+ countries may deliberately skew their reports	Establish a process as stringent as the IAR for Annex I countries or introduce a separate REDD+ verification process

⁵ The different registries are aware of this issue. Currently, the relatively small number of REDD+ projects would make it difficult to double-sell credits.

5 solutions

The above paragraphs have shown that national-level REDD+ methodologies are works in progress on all fronts.

Verification is just one piece of the jigsaw puzzle the parties are putting together. In this paper, we propose solutions for REDD+ verification only.

None of the interviewees denied the need for verification, but one developing country negotiator asked the question ‘What is actually so special about forests that REDD+ verification procedures should go so far beyond what is required for National Communications and their Update Reports?’ This, however, speaks more to the ICA process than to REDD+ verification.

In practice, most REDD+ activities will be bilateral, between a single donor on one hand (a country or a development bank) and the REDD+ country, on the other. These are carried out under contractual law, where reporting and verification duties can be defined in the way most suitable for the respective cooperation.

International rules for the REDD+ verification problem are only needed in cases where the results-based activities are truly multinational.

5.1 First-best option

The basic concern of developed country parties is that the rules for national-level reporting for developing countries are flawed. Also, the ICA process has not yet been sufficiently defined as to offer the needed level of transparency and independence. In the interest of methodological clarity, the first-best option would be to have a review process equivalent to Annex I reporting covering GHG emissions and uptakes in all relevant sectors. With the increased frequency of reporting, the need for reviewers will increase in any case. It has been observed that reviewing is also

a learning and capacity-building exercise, which will be helpful for the respective experts themselves to improve the quality of their own national reporting. This would also contribute to the improvement of national MRV as a precondition for results-based activities, given the currently prevailing levels of data uncertainty.

Some developing countries, however, see GHG reporting on equal footing with industrialized countries as a precursor to accepting binding national emission targets, which they are careful to keep off the agenda for as long as possible. When talking to representatives of emerging economies, they show awareness of the fact that G77, the developing country coalition, is already divided into three sections: least developed, developing and emerging countries. It is very likely that in 2020, the latter group will belong to the committed countries. One of the interviewees stated, ‘we are in an interim phase today. Regulations need not be set in stone, because the regime will change anyway.’

As the international climate negotiation process goes ahead, the parties may come to more generic GHG reporting duties that make obsolete the intermediate regulation to be found for REDD+ specifically.

5.2 Second-best options

It is a shared understanding that results-based actions need to prove effectiveness. REDD+ is part of NAMAs, and every donor will find bilateral ways to prove effectiveness. The ICA process does not seem adequate at this time to fulfil this goal, but results-based REDD+ activities should not be hampered by conflict around the ICA process.

Finding solutions is easier, if the topics are no longer burdened with notions of past conflict.

‘Review’ has been used for Annex I inventories, and many developing countries do not want the same rigor to be applied to their inventory as to the ones of industrialized countries. ‘Verification’ is a term from carbon offset project activities. It may be helpful to apply a new term to the **REDD+ Effectiveness Assessment (REA)** of international results-based finance for national-level emission reductions. This term also expresses that the procedure will only apply under specific circumstances.

Different verification/REA procedures can be discussed:

1. **Roster of inventory experts:** This option should not be ruled out categorically, just because it became hostage of the debate on long-term finance. For the Annex I inventory review, the experience has been broadly positive, because it builds up capacities for the reviewers that they can use in their own country’s inventory work. Given the increased reporting duties, the roster of experts will only be able to cope with its duties in a timely manner if the UNFCCC Secretariat receives sufficient funding to attract new inventory experts.
2. **Peer verification:** Some developed countries have proposed internal independent verification, which is not an acceptable procedure for the donors. Alternatively, verification could be carried out by peers from the same region, together with experts from other developing countries and only with a minority representation of donor countries. This will also facilitate further south–south capacity and technology transfer.
3. **Third-party verification/REA:** As in the cases of Costa Rica and Chile, verification can be carried out by private third parties (operational entities), according to internationally accepted carbon standards. The latter are currently preempting future regulation and will adapt to any UNFCCC requirements. Thus, verification will be able to start early.
4. **A combination of the above:** The REDD+ guidance can establish the commonly accepted principles of MRV, but leave flexibility on how these are fulfilled in individual cases. This approach allows for gathering experience and evaluating it after a period of 5 years.

6 Conclusions

- Contrary to its initial design, REDD+ is increasingly becoming an ODA mechanism. The verification debate needs to be understood in the context of the arguments around aid conditionality.
- For a results-based mechanism like REDD+, verification should be a normal procedure within a whole suite of MRV rules. This opinion is shared in principle by all negotiators and observers.
- Bilateral activity-based REDD+ is subject to contractual law between the implementing partners and usually includes MRV procedures.
- International regulation on verification is needed exclusively for multilateral funding under a mechanism of the Climate Convention, such as the Green Climate Fund (GCF) in phase III of results-based actions.
- At present, no country is yet in phase III, where full verification is needed. There is space for experiments over the coming 3–5 years.
- The impasse in the Doha negotiations is the result of specific historical circumstances in a transitional phase towards a new climate treaty and new responsibilities for the emergence of today's developing countries.
- Verification is only one of the areas of environmental integrity and effectiveness, the others being forest definitions, measurement, RLs, reporting and registries. Environmental integrity and effectiveness can only be granted if tackled at all levels.
- In order to reflect the limited scope of the international verification debate, the introduction of a new term for it is suggested, for example, REDD+ Effectiveness Assessment (REA).
- In the absence of an agreement on regulated verification procedures, further fragmentation of REDD+ finance will result, which, for some interviewees, is not the worst-case scenario, but which may limit the potential for long-term predictable finance.
- The lack of market signals combined with the expected change in the role of emerging economies should be used for provisional regulation, which can be revised over time.

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CIFOR Occasional Papers contain research results that are significant to tropical forestry. The content is peer reviewed internally and externally.

Amid the discontent of developing countries about the lack of reliable finance for Reducing Emissions from Deforestation and forest Degradation (REDD+), the issue of verification of results-based activities reached an impasse in the 2012 Doha negotiation round of the UN Climate Convention, leading to the suspension of the formulation of a REDD+ Methodological Guidance.

The disillusion about REDD+ finance mainly stems from the weakness of demand on carbon markets. Presently, development assistance is the main funding source, which brings up the old debate around aid conditionality, because obviously 'results-based' implies conditionality for funding. This paper assesses the issues of REDD+ financing and verification in the context of the negotiation positions of the key countries in the present debate. In its preparation, a number of interviews with REDD+ negotiators have been undertaken, in order to better understand the different positions. The study first narrows down the focus on international verification to UN-based funding mechanisms, while bilateral and multilateral funding for individual country activities will usually be granted under individually agreed conditions.

Summing up, the study proposes options for the consistent verification of all Nationally Appropriate Mitigation Options, of which REDD+ is only one, under a transparent, peer-reviewed International Assessment and Review process. The more realistic proposal seems to be a second-best option of verifying REDD+ activities only. A REDD+ Effectiveness Assessment is proposed for internationally results-based finance for REDD+ emission reductions at national level. Different modalities are discussed for the choice of reviewers



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